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Botanical Bulletin.

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OUR OBJECT.—With a good deal of diffidence we present this first copy of the Bulletin to our botanical friends. When the science of Natural History in all its departments has so many able journals devoted to its advancement, it would appear like presumption in us to make what may seem a useless addition to the list. Our aim at present, however, is by no means so lofty, but is simply to afford a convenient and rapid means of communication among botanists. Our little sheet is intended to be devoted to botanical discoveries and observations, and it is hoped that botanists will make use of it. The New England States and New York are well supplied with such means of communication, but we do not doubt that there are many interesting finds and notes west of those States that are only waiting some such opportunity as this to be presented to the botanical world. We do not wish, therefore, to be considered as setting up ourselves against our Eastern friends, but rather as supplementing their good work and aiding them, as far as is in our power, in the discovery of truth, after which we are all striving. We will assure our friends, who desire to make use of this sheet, of a wide circulation among botanists of such notes as they may send us. We shall welcome notes from all botanists and urge them to send us at once such articles as they wish published that they may appear in as early a number as possible. The Bulletin will be published every month and will be enlarged as necessity may demand. Hoping botanists will heartily approve of our undertaking and show their appreciation of our efforts by a contribution of notes, we leave the Bulletin in their hands.—EDITOR.

GENTIANA QUINQUEFLORA, Lam.—In my near neighborhood there is a steep hillside, facing the northwest and partly shaded by trees, where this beautiful gentian grows in great abundance and blooms profusely in the months of September and October. As observed for years past, it exhibits one feature worthy of special note—its diversity in size. Many of the larger plants, more or less branched, with branches usually short and strict, but occasionally elongated and spreading, terminated by cymose clusters of 2-5 flowers, frequently attain a height of full 20 inches. From these it descends by every gradation down to simple dwarfs of scarce 2 inches, which, with their single pair of leaves and 1-2 terminal flowers, remind the botanist of the pretty little alpines of the genus. This diminutive stature cannot result from sterility of soil, which sometimes dwarfs all vegetation, as on the serpentine-barrens of Southeastern Pennsylvania, nor from lack of moisture, for the Lilliputians are scattered amongst the Brobdignagians in such a way as to show that they enjoy just as favorable conditions for development. The cause of their dwarfing may lie in the fact of their later germination, or in the constitution of the plant, or in both. At all events, the diversity should be recorded in the description of the species, and, for its complete representation in the herbarium, all the forms should be collected. We have also some other annuals, which possess the same peculiarity in a marked degree. Prominent amongst them are *Erigeron Canadense*, L., *Lobelia syphilitica*, L., *Campanula Americana*, L., *Specularia perfoliata*, A. DC. and *Mimulus luteus*, *L.* The last is a striking example. Along the water-

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courses, high up in the Rocky Mountains, may be found specimens more than a foot tall, laden with flowers, and, beside them, dwarfs of an inch or two, each bearing a single large, yellow flower, exceeding in size all the rest of the plant.—PROF. THOS. C. PORTER, *Easton, Pa.*

QUERCI NEAR HANOVER, IND.—In my botanical tramps this fall I have been very much attracted, and in fact, charmed by the oaks of this neighborhood. For some unaccountable reason these noble trees have never been satisfactorily determined. Many botanists have gone prowling around peering into every imaginable nook and corner for fear some diminutive little member of the vegetable kingdom may escape them, although it may be of no use to any one except a botanist. They never think of looking over their heads and studying the grander works of the plant kingdom, and of learning the names of things not only interesting to themselves but to every intelligent citizen in the land. I have met botanists who had on their tongues' ends the name of every shrub and herb, but who would have been compelled to yield to almost any intelligent farmer's boy if asked to name the trees. With the aid of a botanical friend I determined to give the trees of this region such an overhauling as they had never enjoyed. In the flora of Jefferson county, contained in the Report of the Indiana State Geological Survey for 1870, five Querci were reported for the county. In the list for 1874 the number was increased to six. We are able now to report with certainty nine species of the genus Quercus growing within an hour's walk of Hanover and hope to be able to report others from the county. The species are *Quercus alba*, L., *Q. macrocarpa*, Mx., *Q. bicolor*, Willd., *Q. Prinus*, L., var. *acuminata*, Mx., *Q. imbricaria*, Mx., *Q. coccinea*, Wang., *Q. coccinea*, Wang., var. *tinctoria*, Gr., *Q. rubra*, L., *Q. palustris*, DuRoi. *Q. alba* is by far the most common and valuable species. *Q. palustris* is used considerably for making clapboards and is one of the best marked species of the genus. The acorns are much smaller than those of any other of our species, are beautifully striped with paler lines and grow in most wonderful profusion. We noticed a tree upon which they were hanging in perfect clusters. It is reported that *Q. macrocarpa* is used for making shingles but I cannot vouch for the truth of this statement.—ED.

ASTER NOV.E-ANGLIE, L.—This large and beautiful Aster is found growing spontaneously in this neighborhood. It sometimes attains a height of eight feet, showing that the conditions of soil and climate are very favorable for its development. I have noted two things about this species that are not mentioned in any description I have seen. The first thing noticed when analyzing the flower was the strong, and to me, offensive odor coming from the heads, especially when bruised. I have been unable to decide what the odor most resembles, and think it must be *sui generis*. It is a little like camphor or turpentine, and probably is a mixture of several strong-smelling hydro-carbons. It is so characteristic that if a head of the plant was brought to me in the dark I could at once pronounce it to be *A. Novæ-Angliæ*. It is a pity that in dried specimens the fragrance is lost. Many plant odors are very characteristic, but are never mentioned because the plants have been described from dried specimens and the discoverer has made no note of the fact. Besides the odor of the plant just mentioned, I call to mind the delightful fragrance of *Coreopsis tripteris*, L., the heads of which exhale most decidedly the odor of mignonette.

The second point noticed in regard to *A. Novæ-Angliæ*, was the wilting and folding in of the rays after sunset. I tried to get some good specimens one evening after sunset but could not find a single head among the hundreds I saw that did not look hopelessly wilted. The next morning they were as bright and fresh as they had ever been. This is one of the finest illustrations of the so-called "sleep of plants" to be seen in this region.—ED.

NOTES ON CERTAIN SPECIES OF THE GENUS ASPLENIUM.—This genus of Filices figures somewhat largely here when compared with other genera, not only in its number of species, and their distribution, but also, in general interest. Of the

Asplenia we number four species. Of these at least one may be classed among botanical rarities, while another deserves attention for its geographical distribution. Our most common species is *A. Filix-fœmina*, Bernh., and it may be said to inhabit Jefferson county generally, but as yet I have not been able to detect it upon the river bluffs of the Ohio or in the ravines running back from it. It rather selects fence-rows of the moist and flat uplands, while it is not uncommon in the upland woods. As noted by Professor Eaton in the Filices of Gray's Manual, we find this species extremely variable here. The fronds often have the pinnæ of the terminal quarter lance-linear. The pinnules of the lower pinnæ range through ovate, oblong, and lance-linear with the tooth at the base of the upper margin prominent. The confluent pinnules often give an interrupted, ridgy and channeled appearance to the secondary axis by an epidermal rise along their midrib which passes along the secondary axis to the pinnule below. The stalk is chaffy below and more or less glandular (?) hairy throughout, as is also the secondary axis. This feature is more decided in the immature fronds.

A. thelypteroides, Mx. is decidedly local. Besides "3-6 pairs" (or less) of fruit dots, there is occasionally an additional odd dot. The margins of the lobes of the pinnæ seem to have a strong disposition to turn under, like *Adiantum*, thus concealing the small teeth. The stalks are quite long and chaffy hairy. We also notice that to a limited extent the ridges of the secondary axis (spoken of under *A. Filix-fœmina*) still exist, but in a reversed order, being more prominent upon the upper surface of *A. Filix-fœmina*, and upon the lower surface of *A. thelypteroides*.

A. angustifolium, Mx. is interesting as being found in Southern Indiana. It is an inhabitant of cooler regions, and here it seeks the dampest and coolest portions of the ravines running back from the Ohio river and is always found encircled by a rich carpet of moss to shield its roots from heat and retain sufficient moisture. It is by no means abundant, and indeed, this remark will apply to all our Ferns with the exception of three or four species. Pinnæ of the sterile frond are quite abrupt at base, those of the fertile less so. Very frequently the fronds that are sterile in general appearance and character will bear a few fruit-dots upon a half dozen pairs of pinnæ.

Lastly, we would mention our most interesting species, *A. Ruta-muraria*, L. This species, as far as we can discover, is very local. It has been found attached to the limestone cliffs of the Niagara Epoch in but one locality, embracing a range of 300 or 400 yards in length. It also seems to confine itself to a narrow vertical range of about 15 or 20 feet. We have also observed that this same vertical range applies to *Pellæa atropurpurea*, Link. *A. Ruta-muraria* has been found this year growing in greater abundance than ever observed before, due, perhaps, to an unusually wet season. In dry seasons, being very much exposed to the direct rays of the sun, it rapidly shrivels up and thus escapes observation. Its hold upon the rocks is very close, as it sends out dozens of small thread-like rootlets, which penetrate readily into the minutest crevices. Speaking of the roots we would mention a very interesting observation of our own which we have not seen recorded. The scales of the stipe are quite densely aggregated at its base and are objects of great beauty. We would describe them as being *pellucidly-netted, lance-linear and filiformly-pointed*. The duration of these ferns in their perfection of beauty and color depends somewhat upon the approach of frost. *A. thelypteroides* and *A. angustifolium* seem to be quite sensitive to the cold and bleach with our first frosts. *A. Filix-fœmina* is much hardier and together with the last two may be ranged from July to November. The little *A. Ruta-muraria*, however, seems to partake of the nature of an evergreen here, having been observed from March to December and, as far as we could judge, not affected by the keenest frosts.

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[We can vouch for the correctness of this last observation, and have thought for some time that *A. Ruta-muraria* must undoubtedly be an evergreen.—ED.]

LIST OF PLANTS COLLECTED IN THE BLACK HILLS DURING THE SUMMER OF 1874.—The following plants were collected by Prof. Donaldson while connected with Gen. Custer's Expedition to the Black Hills during the season of 1874. The collection was necessarily very hasty and of course meager, embracing about 80 species of plants. The collection was sent to the writer by Prof. N. H. Winchell, of Minnesota, and was retained and reported on. The bare list is here presented to botanists, not to forestall the regular report, but as it may be of interest to know what botanical work was done upon an expedition otherwise rather famous. A few of the species, of uncertain determination, are in the hands of Prof. T. C. Porter, and will be noted hereafter if they necessitate any change in the list:

Aconitum nasutum, Fisch.
Linum perenne, L.
Geranium Fremontii, Torr.
Lupinus ornatus, Dougl.
Lupinus parviflorus, Nutt.
Lupinus leucophyllus, Lindl. (?)
Hosackia Purshiana, Benth.
Petalostemon violaceus, Mx.
Petalostemon candidus, Mx.
Astragalus adsurgens, Pall.
Astragalus pictus, Gr.
Glycyrrhiza lepidota, Nutt.
Potentilla arguta, Pursh.
Spiræa betulæfolia, Pall.
Epilobium angustifolium, L.
Œnothera pinnatifida, Nutt.
Œnothera cæspitosa, Nutt.
Œnothera serrulata, Nutt.
Gaura coccinea, Nutt.
Mentzelia nuda, T. & G.
Mamillaria vivipara, Haw.
Opuntia Missouriensis, DC. (?)
Carum Gairdneri, Benth. & Hook.
Galium boreale, L.
Liatris scariosa, Willd.
Liatris punctata, Hook.
Aster multiflorus, Ait.
Machæranthera canescens, Gr.
Erigeron Canadense, L.
Erigeron macranthum, Nutt.
Erigeron glabellum, Nutt.
Erigeron divergens, T. & G.
Solidago Virga-aurea, L., var.
Solidago nemoralis, Ait.,
var. *mollis*, Bartl. (?)
Solidago Missouriensis, Nutt.
Solidago Canadensis, L.
Bigelovia graveolens, Gr.
Aplopappus spinulosus, DC.
Grindelia squarrosa, Dunal.
Chrysopsis villosa, Nutt.
Rudbeckia hirta, L.
Echinacea angustifolia, DC.
Lepachys columnaris, T. & G.
var. *Tagetes*, Gr.
Helianthus petiolaris, Nutt.
Helianthus lenticularis, Dougl.
Gaillardia aristata, Pursh.
Chænactis Douglasii, Hook. & Arn.
Achillea Millefolium, L.
Artemisia dracunculoides, Pursh.
Artemisia Ludoviciana, Nutt.
Crepis runcinata, F. & G.
Macrorrhynchus troximoides, T. & G.
Mulgedium pulchellum, Nutt.
Campanula rotundifolia, L.
Arctostaphylos Uva-ursi, Spreng.
Lysimachia ciliata, L.
Pentstemon glaber, Pursh.
Pentstemon acuminatus, Dougl.
Pentstemon pubescens, Soland.,
var. *gracilis*, Gr.
Mimulus luteus, L.
Castilleia pallida, Kunth.
Monarda fistulosa, L.
Lophanthus anisatus, Benth.
Stachys palustris, L.,
var. *cordata*, Gr.
Gilia pungens, Benth.
Collomia linearis, Nutt.
Cuscuta decora, Eng. (?)
Oxybaphus nyctagineus, Sweet. Form.
Paronychia sessiliflora, Nutt.
Eriogonum multiceps, Nees.
Zygadenus glaucus, Nutt.
Calochortus Nuttallii, T. & G.
Bouteloua oligostachya, Torr.
Triticum caninum, L.

ED.